

Chapter 1

INTRODUCTION

In September 1978, the consulting firm of Vogt Sage & Pflum completed its Final Report on the **Greater Lafayette Area Transportation and Development Study**. That report -- prepared for the Tippecanoe County Area Plan Commission -- included a Transportation Plan adopted by the Commission the previous December, with additional sections on plan phasing, financing and implementation. Three years later, the Report was included as an element of the **Comprehensive Plan for Tippecanoe County**. **The Comprehensive Plan** was adopted by the Commission and then by its five member governments: The Cities of Lafayette and West Lafayette, the Towns of Dayton and Battle Ground, and unincorporated Tippecanoe County.

This work represents a third update of that original Transportation Plan, and as such, an amendment to the adopted **Comprehensive Plan**. It becomes a part of the continuous process of planning and implementation which brings our growing community the transportation improvements it so clearly needs.

This Plan, like its predecessors, is the product of a cooperative effort, involving public officials, agency staffs and citizens of the community. The process which has generated alternative solutions to our major issues, and ultimately the plan itself, has been discussed, tested and evaluated in open forum, through the efforts of the Area Plan Commission of Tippecanoe County and its staff.

REASONS FOR TRANSPORTATION PLANNING

Transportation planning is important to the community for a number of reasons:

- It helps us work effectively within the always difficult funding situations facing proposed transportation projects. Rising construction costs and falling revenues require public officials to spend funds in the most effective way possible. Project expenditures can best be made through sound planning and fiscal programming, within a system-wide context.
- It helps us find our way through the maze of local, state and federal agencies charged with project implementation responsibilities. The transportation plan and its implementation program call for the coordinated spending of more than a dozen sources of transportation funds. It is crucial that all agencies controlling these funds actively participate so that funds are made available as they are needed.
- It notifies the public, the development community and other government agencies of an established and approved transportation framework. Without a plan, development and redevelopment projects cannot be designed to be consistent with community needs.
- It provides a basis for enforcement of local regulations. The plan standardizes zoning, subdivision and other ordinances regarding right-of-way reservation, setback controls, design standards and access controls.
- It fulfills the federal mandate for a *continuing, comprehensive and cooperative* transportation planning process. This Federal Aid Highway

Act requirement must be met if local communities are to receive available funds to assist with transit, highway, railroad and airport facilities and operations. Each year the area is "certified" as being eligible for federal aid if the process is functioning effectively. Decertification means USDOT funds cannot be obtained in the urbanized area for transportation projects. Full certification of our transportation planning process was first achieved on June 30, 1978; we have been recertified annually ever since.

In short, the transportation planning process gives us an effective way to coordinate the full variety of available financial resources on a continuing and comprehensive basis.

LOCAL ORGANIZATION AND PROCESS

The Area Plan Commission of Tippecanoe County is designated by the Governor to be the official "Metropolitan Planning Organization". Thus, in addition to local and state mandated functions related to planning and zoning, we are the responsible local agency for transportation planning and for review of all federally assisted projects and programs within the County. Our Executive Director and supporting staff carry out technical tasks that lead to adoption of a transportation plan, such as the one documented here.

The Area Plan Commission also encompasses three standing committees -- Administrative, Technical Transportation and Citizens Participation -- to oversee the planning process and to advise on important decisions and resolutions. Each was involved in this planning process.

- The Administrative Committee receives the counsel of elected and appointed officials involved with policy, administrative and fiscal

decisions. Members of this committee ultimately have important responsibilities in implementing the plan recommendations.

- The Technical Transportation Committee gains the advice and knowledge of various agency engineers, planners, traffic police, and transit operators. Members have important responsibilities for designing, operating, and maintaining the transportation system.
- The Citizens Participation Committee receives ideas and comments from a representative group of persons from throughout the private sector of the community. These citizens provide important observations in evaluating plan alternatives.

The assembled goals and objectives that give direction to comprehensive planning in Tippecanoe County were generated through the efforts of the Citizens Participation Committee. The 1976 Plan reached hundreds of citizens within APC's jurisdiction. That work is summarized in Chapter II of the ***Greater Lafayette Area Transportation and Development Study*** Final Report, which contains the original 1978 plan. A full presentation can be found in the 1976 APC publication, ***Goals and Objectives Formulation Process***. In this report, we address the specific goals and objectives relating to transportation in **Chapter 6**.

Review of the plan proposals in this document has been accomplished between the Fall of 2000 and Winter of this year through presentations to the Administrative Committee, Citizens Participation Committee and the Technical Transportation Committee. Suggestions and comments were incorporated into the 2010 and 2025 network plans shown in this document.

TEA 21's PLANNING FACTORS

Under TEA 21, Congress intended Metropolitan Planning Organizations to consider and include seven factors in developing Transportation Plans and Programs. In developing this Plan, we considered all of them. Here is a synopsis:

Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.

Economic growth was identified as one of six areas of concern in the adopted 1978 Plan. This Plan continues those specific goals and objectives.

To support and improve the economic vitality of the Greater Lafayette Area, this Plan strives to strengthen the connections between different modes of transportation. It also seeks to reduce travel delay to maintain on time delivery service and reduce lost productivity. To reduce delay and improve travel time, this Plan strengthens and improves upon the circular and radial road system.

One objective this Plan attempts to incorporate is the vital connection and ease of movement of persons and goods in and through the area. It provides connections by continuing to develop multiple ring road systems around the community, and strengthening the cross routes. Improvements to the major corridors that bring commuter traffic from surrounding Counties are specifically targeted.

Increase the safety and security of the transportation system for motorized and nonmotorized users.

This Plan increases safety and security for both motorized and non-motorized user by different means.

a) When comparing the build to no build scenarios; the combination of projects in the 2010 and 2025 horizons reduces congestion in various corridors. With reduced congestion, conflicts are reduced thus increasing safety.

- b) For all road improvements, whether increasing the number of lanes or new construction, design standards will follow national guidelines. Those design standards outlined in the Thoroughfare Plan will also be adhered to.
- c) In addition to road design standards, all improvement projects will incorporate safety measures for bicyclists and pedestrians.
- d) The Plan pursues construction of railway/roadway grade separations, or relocation of rail lines to reduce motor vehicle/train conflicts.
- e) The Plan includes implementation of projects identified in the Transit Development Plan and the Bicycle Plan.
- f) The Plan encourages development of a highway system that diverts through traffic from residential neighborhoods while still providing accessibility.

Increase the accessibility and mobility options available to people and for freight.

This Plan strengthens and creates accessibility on two distinct levels. One focuses on improving the connections throughout the road network. The other provides additional connections and improvements between modes of travel. Not only do citizens benefit, but travelers and businesses do as well.

Travel time is of utmost concern for people who continue to use their automobiles and businesses whose goods are truck delivered. This Plan reduces travel and shipment time by increasing accessibility through a circular or ring road system with major radial connections. Improvements also target the corridors that carry travelers, workers, and freight from other Counties and States.

Increasing bicycle and pedestrian mobility is an important goal within this Plan update. All proposed road improvements will include provisions for these two non-vehicular modes.

Protect and enhance the environment, promote energy conservation, and improve quality of life.

This Plan Update incorporates these three goals. It does so at various stages and steps throughout the Plan: forecasting future data, designing roads, and improving multi-modal transportation. Some improvements benefit all three, others only one or two. All three are integrated within this Plan Update and they do play a significant role.

The foundation for this work is **The Comprehensive Plan for Tippecanoe County**. It strongly guides future development, both residential and business, into a compact pattern, thus reducing urban sprawl. Benefits include less travel time to points of interest, less fuel use and fewer emissions.

This Update builds upon the multi-modal base found in the last Plan. Transit continues to play a major role. So do facilities for bicyclists and pedestrians. Not only do new road improvements incorporate these modes of travel; this Plan contains improvements specifically for these modes. Multi-modal travel not only promotes energy conservation it also improves the quality of life.

Each road widening or new construction project will follow INDOT, FHWA and EPA guidelines regarding environmental protection.

The process used when developing this Plan is consistent with applicable federal, state, and MPO adopted energy conservation programs.

Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.

Citizens established in the original 1978 Transportation Plan, an objective to develop an area-wide circulation network to accommodate present and anticipated future traffic demands. This Plan update builds upon that foundation. Projects proposed within connect to each other via ring or circular and radial routing.

Constructed under previous plans, Tippecanoe County created connectivity between the eastern and southern sections of

Lafayette via CR 500E and CR 350S. To the west, INDOT has completed or working on pre-engineering, engineering and construction of a western connection, US 231. This ring road, or circular system, connects all National Highway System Roads as well as major principal corridor arterials in both Cities.

This Plan Update further strengthens this connectivity by extending US 231 northward connecting it to I-65 and SR 43. With construction of the Hoosier Heartland to SR 25, and by using I-65 to this new corridor, people and freight can travel around both Cities with little delay.

Although of lesser impact, this Plan Update proposes additional projects that strengthen connectivity throughout the communities.

Promote efficient system management and operation

This goal encompasses a wide spectrum of tasks and projects. It begins with continued maintenance of the existing road system, identification of deficiencies within the system, and then targeting specific projects.

It is the intent of the member jurisdictions to preserve existing transportation facilities through maintenance and repair programs and to utilize existing transportation facilities more efficiently, where practicable. This Plan Update recommends the creation of additional lanes by removing parking during peak hours along certain urban corridors.

This Plan Update promotes efficient operation through management systems developed both by INDOT and our member communities to be used to identify transportation needs. Those needs translate into projects that will show up as maintenance and capital improvements in future budgets and Transportation Improvement Programs.

Specific projects that meet this goal are more micro in scale than new road construction projects. These include traffic signals at suggested locations, improved signal timing and synchronization, and reduction or elimination of rail/street crossings.

Emphasize the preservation of the existing transportation system.

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Several road improvements would use existing corridors: US 231 would use portions of McCormick Road. The Hoosier Heartland corridor would be aligned with the current Norfolk Southern Tracks, thus placing two modes in one corridor, and reducing both the number of road crossings and rail crossings.

ENVIRONMENTAL JUSTICE

A new area of emphasis this Plan focuses on is Environmental Justice. Environmental Justice further amplifies and strengthens Title VI. It assures that minorities and persons of low income are considered in developing this Plan. Further, improvements that are proposed in this Plan must not disproportionately impact them. We define minorities as African American, Hispanic, Asian, and American Indian.

Environmental Justice encompasses three principles:

- to avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low-income populations;
- to ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and
- to prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Specific steps were developed for this Plan. Each step addresses a specific goal. Proposed improvements were assessed relative to Census tracts that have a higher than average number of minorities or persons of low income. Additional outreach to minority groups has been accomplished. After assessment, indicating minimal or no impact, then proposed projects are scheduled based on need and funding.

Environmental Justice Assessment

Principal One: avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.

To identify if a project disproportionately impacts minority and low income persons, we divide this analysis into two levels: a macro and micro review. On a macro level, proposed improvements that may have an impact are identified. Improvements so identified are taken forward to a micro review for further analysis.

Under the macro review, maps depicting 1990 Census tracts and proposed improvements were created for areas of concentrated minority group and/or low-income population. These maps highlight those tracts demonstrating higher than average target populations. Projects located in tracts with less than average target populations, or that have been completed, are under construction, will start construction shortly, or that will be funded using only local funding, were not forwarded to the micro review.

The micro review then looks at those projects that may have an environmental justice concern. Using 2000 aerial photos, projects were

examined individually. Staff evaluated each project according to the nine concerns: displacement of residents; increase in noise and air pollution; creation of barriers in neighborhoods; destruction of natural habitat; reduction in access to transit; displacement of persons, businesses, farms, nonprofit organizations; increase in traffic congestion; and isolation.

Results of the micro review range from as many as four concerns per project to none. Two projects, the widening of South Street from Main to US 52 and the widening of SR 43 from Robinson to Happy Hollow, indicate four concerns. South Street may possibly dislocate some residents and businesses, create barriers between neighborhoods, and reduce access to walkways. Three of these concerns apply to the SR 43 project, which would not create a neighborhood barrier but would destroy some natural habitat. Only three projects indicate three concerns: the widening of US 231 from the SR 25 south intersection to Teal Road, the widening of SR 25 from CR 375W to CR 100W, and the widening of US 231 from CR 500S south to the county line. The majority of remaining projects yielded one concern. Proper engineering will be able to mitigate nearly all of them. Reducing the right-of-way needed through design will reduce the dislocation of residents and businesses. Many of the projects involve widening corridors that already exist. Improving pedestrian and bicycle crosswalks will improve reduced access to walkways.

Principal Two: ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

This Plan update focuses on increased community awareness through additional media coverage and citizens meetings. Staff contacted the JOURNAL AND COURIER newspaper which resulted in a story and listing of the meetings in the local meeting section. Television was utilized too.

Before the December meeting, an interview was broadcast during the noon, evening and late night news. Before the January meeting, Staff gave a live interview. The press attended and reported all three meetings.

Three citizens meetings were utilized to present the on-going testing and work. Comments were received and are listed in **Appendix 4**. Staff also held a special Area Plan Commission Work Session to present the data, steps taken, model, and proposed improvements. Comments and questions were answered. The meeting was held in open forum and it was reported by both broadcasting and print media.

Principal Three: prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Projects proposed in this Plan Update were identified from deficiencies shown in the traffic model or through public input and comment. The phasing of projects was based on need and financing.

MAJOR LOCAL ISSUES

This work addresses a number of major on-going local transportation issues. We can solve some of these within the next twenty-five years. Others will need the continuing attention of local officials and citizens for some time to come. Some may never be resolved to everyone's satisfaction. However, we have examined issues in the context of a total transportation system. Alternatives have been weighed and recommendations made which seem to offer reasonable solutions.

Our urban area is bisected by the Wabash River. As such, we are always concerned with moving vehicles over bridges as efficiently as possible. Traffic continues to increase on our bridges, and projections indicate even

more vehicular trips in the years to come. The 1978 plan called for an additional river crossing south of the urban area to take pressure off our three urban bridges, and to reduce traffic on streets leading to and passing through downtown. Now referred to as US 231 Relocation, the Indiana Department of Transportation has completed constructing portions of this project. It is estimated that the new bridge and its related construction should be completed by 2001. Additional planning must be done to help move bridge-related traffic through and around West Lafayette in the years after 2000.

The Lafayette Railroad Relocation Project -- with its final phase nearly complete -- is a big, expensive, and sometimes inconvenient job. But it will certainly lower our fuel consumption levels, enhance our quality of life and make our transportation infrastructure safer and more efficient for both the railroads and those driving local streets. Relocating the railroads from 5th Street and the diagonal Norfolk Southern corridor to the riverfront has already increased the vitality of Lafayette's downtown by making it more accessible and more attractive.

INTERMODALISM

As required by ISTEA, the Transportation Plan for 2015 expanded its planning vision to other transportation modes. A bicycle and pedestrian plan was adopted alongside the current Transportation Plan. This Plan update continues to build upon the foundation laid under the last plan.

The adopted Bicycle and Pedestrian Plan continues to play a major role in both Cities and County, and all jurisdictions have applied for special enhancement funding. Several have been successful. Both Cities, as well as

the County, are placing greater emphasis on bicycle and pedestrian travel. The City of West Lafayette is building a loop system around the City. On the east side of the Wabash, Lafayette has applied for enhancement funds to begin its first Linear Park trail.

This Plan recognizes that improvements go beyond individual trails and paths to include the design of road improvements and new construction. Any future improvement needs to include sidewalks, bicycle lanes or a combination of the two, where appropriate.

The Purdue Airport supports a commuter air service to Detroit, along with air cargo shipping and delivery. As an intermodal terminal it interfaces with surface transportation in the form of local bus and taxi service that meet for air passenger needs. Repair and maintenance improvements are complete per a long-term Master Airport Plan which ultimately would relocate the terminal building to a location near the US 231 connection to SR 26 just east of the runways. The Master Airport Plan was recently updated in 2000. In 2000, the passenger enplanements on scheduled airlines totaled 16,339. Small freight handling was mostly pharmaceuticals.

Since the restored historic Depot was relocated to the foot of Main Street, CityBus's downtown ticket operations have been housed in its lower level. Local bus service circulates through Riehle Plaza, where all buses meet after every trip. CityBus operates under five year incremental programs. Short-range goals are addressed in this Transit Development Plan. They will be updated in 2002.

The Depot serves as a multi-modal terminal facility. AMTRAK service stops here, as well as inter-city buses, CityBus and taxi service. Bicycle and

pedestrian trails radiate from this hub on the banks of the Wabash River. CityBus has also expanded the impact of this hub by building a childcare center nearby.

CityBus continues as the main source of public transportation in our urban area. Mass transit -- even at CityBus's scale -- adds flexibility to our urban area transportation system, represents an energy efficient way to travel, and increases mobility of the young, the poor, the elderly and the handicapped. Increased ridership is vital to our community's well-being.

As a means of reducing the need for additional parking facilities on the Purdue Campus, the University and CityBus developed an agreement to allow for unlimited bus use both on and off campus. Students ride anywhere in Greater Lafayette by simply showing an ID card. A year later, this service was expanded to faculty and staff. Ridership in 2000 neared reached three million passengers.

Routes have been modified and created as well. Based at Tippecanoe Mall, a new shuttle service ferries passengers from nearby shopping complexes, apartments and manufacturing companies. The Market Square route has been modified and now runs through the north, then east sides of Lafayette to the Tippecanoe Mall. To the south, a new route travels through the Wabash Avenue Neighborhood, across the south side of town to Tippecanoe Mall. The Mall has now become a second hub for transferring from one route to another.

In late 1999 and early 2000, CityBus daily ridership was approximately 9,900 persons per weekday when Purdue was in session. From the model base year, all daily trips totaled 711,000 in the study area. Transit trips

were only 1.4% of the base year total trips. This is too insignificant to attempt modal-split modeling: Its threshold is 5% of trips.

On December 19, 2000, the CityBus Board of Directors approved a Strategic Plan. Unlike the five year Transportation Development Plan, this one is designed to guide the Corporation over the next five to ten years. The plan sets out four goals:

- Increase the number of transit riders by promoting more transit-friendly development and transportation policies.
- Plan for growth: fleet and maintenance infrastructure.
- Improve the ease and use of public transportation by using available technology.
- Maximize funding sources to meet daily service levels and provide necessary capital improvements.

Each goal is discussed in great detail with proposed courses of actions listed.

The State of Indiana has an active group dedicated to bringing high-speed rail to the State. Several routes have been delineated with one passing through Lafayette connecting Chicago to Indianapolis and further east to Cincinnati. If high-speed rail becomes reality, Lafayette may become a commuter hub for Chicago. This in turn may create additional demand for housing, and spur retail growth.

More than ever, we must deal with a series of "network-oriented" -- as opposed to "project-oriented" -- issues. We are witnessing industrial expansion to the east and southeast, significant commercial development along our arterials, record-breaking enrollments at Purdue University, and

residential expansion in all directions. Our roads are noticeably more congested, delays are longer, and safety at key intersections can be questioned. Alternative networks have been evaluated in terms of these issues and others relating to social and economic factors.

THE 1978 PLAN: A REVIEW

The Transportation Plan, adopted in 1978, served as the foundation for later efforts in the Greater Lafayette Area. Like this updated version, it too was intended as a guide for the development and construction of roadway projects. However not all recommendations, proposals and objectives have been met.

The steps used to develop all previous plans were, in effect, the same ones we follow in this version: development of necessary parameters, testing of alternative solutions, and determination of which projects would be of most benefit. What differs this time is that we no longer need to rely on consultants to generate traffic forecasts. We can now do these in house, with our own computers, at considerable savings in cost and time.

Those involved in the 1978 process explored a number of alternatives, from which a single plan was chosen. Choices were based on system costs, service quality, economic, social and environmental impacts. After determining a single alternative, five-year incremental plans were developed. Each project was "staged" within a specific five-year period according to its expected benefit.

The 1978 Plan included a list of 23 "major component" roadway projects, ranging from Railroad Relocation to specific intersection improvements. We

have seen significant progress and even completion on most projects; others have been delayed for a lack of funding. Some are still waiting to be "staged".

Between 1978 and 1985 the Environmental Impact Statement and Final Design of the Railroad Relocation Project were completed. Construction of the first phase -- the Wabash Avenue Underpass -- was completed in 1987. The State Road 26 Replacement Bridge -- Phase 2 -- was completed in 1992. The Ninth Street Underpass -- Phase 3 -- was completed in 1993. CSX Relocation -- Phase 4 -- was completed in late 1995 with landscape planting completion of this phase in spring of 1996. At this point 18 of 42 rail crossings have been eliminated. Work on part of the 5th and final phase -- Norfolk Southern Relocation -- began in 1997. Then on January 23, 2001, the first Norfolk Southern train passed through downtown in the river corridor. On April 6th, 2001, the last train traversed the City in the old diagonal corridor.

We continue to see progress on the US 231 Road Relocation project. Without any fanfare, INDOT opened the first segment of relocated US 231 in 1997. Motorists are now diverted onto the new road just south of CR 500S with the journey ending at SR 25. To the north, construction is complete to River Road. Reconstructing River Road continues with portions already done. It is anticipated that motorist will be able to traverse the entire route sometime in 2001. Both local and INDOT officials are pressing forward moving the relocation further northward. INDOT is now working on the engineering plans for the second phase, extending US 231 to SR 26 west of Airport Road. Further north, a consultant has been selected to identify corridor location and environmental impacts between SR 26 and US 52.

By 1990, Lafayette's Earl Avenue project -- a four lane improvement between South and Main Streets was completed. In West Lafayette, improvements at the Brown Street/State Street/River Road intersection were also completed. Kalberer Road (CR 350N) is complete from Morehouse to CR 50W. In the southern part of the county, CR 350S is now complete and in use from US 231 to SR 38. Several major intersection improvements have been made along "component" corridors since 1978:

- Main Street at Kossuth and at Earl;
- South Street at Sagamore Parkway;
- Teal Road at 9th, 18th, and Sagamore;
- Yeager at Northwestern;
- SR 43 at Howard, at Prophets Rock, at Burnetts Road and at CR 600 N;
- US 231 at Northwestern and Fowler Streets, at Grant and Cherry Lane.

In early 1990 the Lafayette City Council established tax increment financing districts along Creasy Lane to finance the extension of Creasy Lane from State Road 38 to Brady Lane and the reconstruction of Creasy between State Roads 26 and 38. In October 1995, the City officially opened the newly widened Creasy Lane between Greenbush to McCarty Lane. Several months later, in December, the section between US 52 to SR 38 was completed. The section between McCarty Lane to SR 38 was finally completed in October 1997.

The Area Plan Commission amended the Thoroughfare Plan element of the **Comprehensive Plan** in 1988, shifting the "Beck-Brady" corridor further south and west. Twyckenham Boulevard, built in the early 1980s, thus became part of the corridor between 9th Street and CR 50E. The City of Lafayette will soon begin construction on the next phase, connecting Twyckenham Boulevard from CR 50E to Old US 231. To the east, both the

City and County are designing the new road and bridge over the Norfolk Southern railroad between 9th and 18th Streets.

Another component of the 1978 Plan was completed in 1996. Union Street was widened to four lanes between Creasy Lane and US 52. The City opened later that year the extension of Shenandoah Drive. Just west of US 52, the City completed widening Union Street from Creasy Lane to US 52. Federal funding was utilized west of US 52 while local funds were used east of 52.

The reader will find a full progress report on the 1978 Plan's 23 "major component" projects in **Appendix 1**.